

# Investigation of arylated arsenic compounds as cardiac stimulants

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## Abstract

The paper summarizes the literature data on the biological activity of organoarsenic derivatives, describes compounds with useful biological properties necessary for their use in medicines, and presents the results of the study of arylated arsenic compounds as stimulants of cardiac activity. A stable view of the high toxicity of organoarsenic compounds interfered with their practical use. Existing data on the biological properties of organoarsenic compounds do not give a complete and unambiguous idea of the possibilities of their application. In this connection, this paper was aimed at generalizing the available data on the biological activity of organoarsenic derivatives and obtaining compounds with practically useful properties suitable for their use in medicine. The biological significance of arsenic in the body is determined by its participation in the metabolism. He plays an important role in the enzymatic reactions of tissue respiration. In the light of these concepts, its therapeutic significance is regarded. The action of arsenic was considered as a result of its influence on the vessels through the sympathetic nervous system. With therapeutic doses of arsenic, this is expressed in the expansion of blood vessels and contributes to the improvement of trophism. Administration of high doses results in stagnation of blood, inflammation and even necrosis of the walls of the capillaries.

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## Keywords

Arylated arsenic compounds, Heartbeat amplitude, Microelement, Toxicity, Valence

## References

- [1] D. I. Zakutinskii, Biological evaluation of drugs for the prevention and treatment of radiation sickness, Moscow, Medgiz, 1960, p. 151.
- [2] G. A. Melentjeva, Pharmaceutical chemistry. Medicine, Vol. 1, Moscow, 1967, p. 68, p. 350-359
- [3] John Thayer John, "Organometallic Compounds and Living Organisms, " in J.Organometal.Chem., LXXVI (1974), no. 3, p. 265-295
- [4] L. P. Walls, J. P. Ellis, J. B. West, "The Cemothorapy of Trypanosomiasis, " in Progress in Medical Chemistry, 3rd volume, London, Butterworths, 1963, p. 52-88.
- [5] G. P. Pershin, E. I. Gvozdev, Textbook of pharmacology, Moscow, Medgiz, 1961, p. 403
- [6] N. P. Vashkulat, "Arsenic-containing compounds, their toxic characteristics, " in Hygiene and Sanitation, VI (1972), p. 93-105.
- [7] B. V. Babin, L. I. Isakova, G. S. Levskaia, "Herbicidal activity of some aryl-, alkyl- and arylalkylarsenic acids, " in Chemistry in agriculture, IV (1966), no. 12, p. 923-925
- [8] M. E. Koshland, P. Ochoa, N. J. Fujita, "Amino Acia Pifferences between Highly Cross-Reactive Antibodies", in Biochemistry, IX (1970), p. 1880-1886.

[9] S. I. Galperin, Human and animal physiology, Moscow, Vysshaia Shkola, 1970, p. 653.